

Indicators for Behavioral Pain Rehabilitation

Impact and predictive value on assessment, patient selection, treatment and outcome

Akademisk avhandling

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av
Graciela Rovner

Fakultetsopponent: Gunilla Brodda Jensen, Docent i Rehabiliteringsmedicin,
Institutionen för kliniska vetenskaper, Karolinska Institutet, Sverige

Avhandlingen baseras på följande delarbeten:

- I. Bromley Milton, M.; Börsbo, B; **Rovner, G.**; Lundgren-Nilsson, A.; Stibrant-Sunnerhagen, K.; Gerdle, B. (2013) Is pain intensity really that important to assess in chronic pain patients? A study based on the Swedish Quality Registry for Pain Rehabilitation (SQRP). *PlosOne*. Jun 21;8(6), e65483.
- II. **Rovner, GS.**; Årestedt, K.; Gerdle, B.; Börsbo, B. & McCracken, LM., (2014) Psychometric properties of the 8-item Chronic Pain Acceptance Questionnaire (CPAQ - 8) in a Swedish Chronic Pain Cohort. *Journal of Rehabilitation Medicine*; 46(1), 73–80
- III. **Rovner, GS.**; Gerdle, B.; Biguet, G.; Björkdahl, A.; Sunnerhagen, KS.; Gillanders, D. Clustering patients according to pain acceptance, diagnosis or patient perception differentially predicts response to interprofessional pain rehabilitation (submitted).
- IV. **Rovner, GS.**; Björkdahl, A.; Sunnerhagen, KS.; Gerdle, B.; Gillanders, D. Capturing sex-differences relevant to rehabilitation with the instruments included in the Swedish National Registry for Pain Rehabilitation (in manuscript).



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Rehabilitation Medicine
Institute of Neuroscience and Physiology
Sahlgrenska Academy at the University of Gothenburg, Sweden

ABSTRACT

Chronic musculoskeletal 'non-specific' pain is still highly prevalent, despite advances of the biopsychosocial model in pain care and interprofessional rehabilitation. According to national and international reports, one of the areas in need of empirical evidence and development is the selection of patients to appropriate rehabilitation programs. Pain assessment instruments are often packaged without consideration of underlying models, and this mixture can create further confusion in the field. Furthermore, the instruments used do not indicate to *potentially modifiable variables*, and thus clinicians are still left guessing when assessing and planning rehabilitation for patients with chronic pain.

In order to improve the selection of patients to the appropriated rehabilitation program, this thesis investigates which widely used pain instruments are pragmatic and useful to identifying rehabilitation needs, provide clear guide for therapeutic actions to take in the rehabilitation program. To be clinically relevant, indicators may be also sensitive to capture differential response to treatment and have a good predictive value.

The thesis describes four studies that used existing data, gathered in clinical practice, by the Swedish Quality Registry for Pain Rehabilitation (SQRP) as routine monitoring of assessment and outcome in pain rehabilitation settings. The SQRP data from one big rehabilitation clinic was analyzed using a variety of statistical techniques, including cluster analysis and general linear models. Since the SQRP made changes in the package of instruments, of packages were used, the old one (for Study I) and the new for Studies II to IV.

Results based on the older data (instruments from the 1980's and 1990's), results showed that signs and symptoms such as pain intensity, anxiety and depression, emerged as variables that correlated with quality of life and functioning. These results were consistent with the pain models in force at that time. Signs and symptoms express a topography that is clinically linked to diagnostic considerations, and further expected to be indicators that will lead to effective treatment. These topographical (formistic) variables indicated a certain level of utility at the primary care to identify patients in need for referral. However at the rehabilitation clinic, signs, symptoms or diagnoses were not useful to find distinct groups that indicate their needs or predicted of response to rehabilitation.

On the other hand, clustering the patients according to the core therapeutic processes of Pain Acceptance, from the Acceptance and Commitment Therapy (ACT) emerged as the most useful indicator for rehabilitation when investigating the new package of instruments of the SQRP. Combining the two behaviors and therapeutic processes of pain acceptance (Pain Willingness and Activity Engagement) effectively differentiated four groups with differential pattern of psychosocial status and needs and response to rehabilitation. Pain acceptance could also distinguish differences between the sexes before rehabilitation, suggesting clinical utility in terms of treatment matching and potentially developing alternative treatment modalities for each group and each sex.

Finally, given the number of items in the SQRP and its burden for the individual and the organization, this study also investigated the properties of a shortened version of the Chronic Pain Acceptance Questionnaire (CPAQ) as a step towards a scientific approach to streamlining assessment procedures. The data showed that the CPAQ-8, with less than half the length of the full version, carried similar information, demonstrating good predictive value and sensitivity to track rehabilitation changes.

In conclusion, this thesis presents several methods for investigating indicators that could be used to identify clinically relevant and distinct groups. The usefulness of these indicators depends upon their function and setting. The overall aim was to bring a scientific focus to assessment and triage. Although primarily pragmatic in its focus, the thesis inevitably touches upon the 'usefulness' of different forms of knowing and understanding in the assessment and treatment of pain. These are discussed in relation to psychological theories and their philosophical roots.

Keywords: Chronic Pain, Rehabilitation Medicine, Behavioral Medicine, Pain Assessment, Pain Management, Acceptance Processes, Behavioral Disciplines and Activities; Clinics; Sex distribution & differences

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